

dissociation, the plasma processing apparatus comprising:

plasma generation means comprising an electron cyclotron resonance system in which a microwave is provided having a frequency of from 300 MHz to 1 GHz and which generates a plasma in which the degree of plasma dissociation is an intermediate degree and said gas species containing carbon and fluorine is generated fully in the plasma, and a temperature of a region which forms a side wall of said vacuum processing chamber is controlled to have a range of 10 °C to 120 °C.

4. (amended) A plasma processing apparatus according to claim 1, wherein

in said plasma generation means, a drive of a plasma exciting power supply is carried out intermittently.

5. (amended) A plasma processing apparatus according to any one of Claim 1, Claim 2 or Claim 4, wherein

as a means for adjusting a temperature of said vacuum wall, a temperature adjusted coolant medium is used.

6. (twice amended) In a plasma processing method using a vacuum processing chamber, a sample table for mounting a sample which is processed in said vacuum processing chamber, and a plasma generation means, wherein a plasma processing is carried out by generating a plasma in

response to introduction of a gas which contains at least carbon and fluorine, and a gas species is generated which contains a carbon and fluorine according to a plasma dissociation, the plasma processing method comprising the steps of:

generating a plasma, wherein said plasma generation is effected using an electron cyclotron resonance system in which a microwave having a frequency of from 300 MHz to 1 GHz is employed and wherein a degree of plasma dissociation is an intermediate degree and said gas species containing carbon and fluorine is generated fully in the plasma, and controlling a temperature of a region which forms a side wall of said vacuum processing chamber to have a range of 10 °C to 120 °C.

9. (twice amended) A plasma processing method according to claim 6, wherein

in said plasma generation, a drive of a plasma exiting power supply is carried out intermittently.

10. (amended) A plasma processing apparatus according to Claim 6, Claim 7 or Claim 9 wherein as a means for adjusting a temperature of said vacuum wall, a temperature adjusted coolant medium is used.